REMARKS

Claims 1-4 are pending in the present application. Claims 1 and 3 are herein amended. No new matter has been presented.

Previous Rejections

Applicants acknowledge that all previous rejections are withdrawn in view of applicant's argument and declaration under 37 CFR §1.131 filed on November 26, 2008.

Rejections under 35 USC §103(a)

Claims 1-2 and 4 were rejected under 35 U.S.C. 103(a) as being obvious over Baiker et al. (U.S. Patent No. 4,916,109 (Baiker)), or alternatively, Baiker further in view of Aoki et al., "Crystallization of amorphous Zr-Ni alloys in the presence of H_2 CO, O_2, N_2 and argon gases," Journal of Materials Science, Vol. 21 pages 793-798, 1986.

The Examiner alleged as follows:

> Regarding claims 1 and 4, even though Baiker does not explicitly teach the claimed third metal M in the alloy composition, the $Pd_{33}(ZrO_2)_{67}$ alloy as taught by Baiker is still substantially the same as the claimed $Zr_{100-a-b}Pd_aM_b$ alloy material since b, which has a claimed lower limit of >0, may be infinitesimal. In other words, zero amount of the claimed third metal in the PdZr alloy of Baiker does not overlap the claimed lower limit of infinitesimal amount of the claimed third metal, however, such differences are so small that one of ordinary skill in the art would have expected the PdZr alloy of Baiker to have the same properties as the claimed $Zr_{100-a-b}Pd_aM_b$ alloy.
>
> In addition, since Baiker teaches an PdZr alloy forming process that is the same as claimed and uses a PdZr alloy material that is substantially the same as claimed, one of ordinary skill in the art would have expected

> the ZrO_2 matrix formed by the process of Baiker to be ultrafine particles as claimed. And the PdZr alloy as taught by Baiker is capable of functioning as a hydrogen storage alloy as claimed.

(Office Action, page 3, lines 6-18).

In the amendment, claim 1 is amended to recite "a composition, in atomic %, expressed by the following formula: $Zr_{100-a-b}Pd_aM_b$ (wherein $15 \leq a \leq 40$, $2 < b \leq 10$, and M is at least one metal selected from the group consisting of Pt, Au, Fe, Co and Ni)." Thus, the difference between the claimed invention and PdZr alloy of Baiker et al. has become significant.

As the Examiner admitted, Baiker et al. does not teach or suggest the third metal M in the alloy composition. There is no reason for a person of ordinary skill in the art to add the third metal M to ZrPd system alloy disclosed in Baiker et al..

The Examiner further alleged as follows:

> Alternatively, Aoki teaches that zinc [sic] based alloy such as ZnNi and ZnPd amorphous alloys absorbs considerably quantity of hydrogen and also acts as catalyst for hydrogenation of carbon monoxide(introduction). Since ZnNi and ZnPd are functionally equivalent hydrogen absorbing material and catalyst material, one of ordinary skill in the art would have found it obvious to have used a combination of Zn, Ni and Pd in the metal alloy of Baiker and achieve the same expected success of obtaining a hydrogen absorbing material and/or a catalyst material.

(Office Action, page 3, line 19 et seq.)

However, it is well known in the field of alloys that interaction of elements in an alloy is so complex that it is difficult to predict how an additional element will affect an alloy. Even if it is known that ZrNi and ZrPd amorphous alloys absorb considerably quantity of hydrogen, it does not follow that Ni and Pd are interchangeable. Aoki et al. discusses nothing about Zr-Pd-Ni

alloy system. Therefore, there is no reason for a person of ordinary skill in the art to add the third metal M into the ZrPd alloy.

For at least these reasons, claim 1 patentably distinguishes over Baiker et al. and Aoki et al. claim 2, depending from claim 1, and claim 4 also recites claim 1. Therefore, these claims also patentably distinguish over Baiker et al. and Aoki et al. for at least the same reasons.

Claim 3 was rejected under 35 U.S.C. 103(a) as being obvious over Baiker in view of Aoki.

As discussed above, claim 1 patentably distinguishes over Baiker et al. and Aoki et al. Claim 3 depends from claim 1. Therefore, claim 3 also patentably distinguishes over Baiker et al. and Aoki et al.

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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